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ORIGINAL ARTICLES

THE ENDOCRINE GLANDS.*

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It is the purpose of this paper to review briefly some of the normal functions of the ductless glands as far as known, to touch upon some of the disturbances of function which are fairly well understood, and finally, with reference to the glands less well understood, to present some of the conflicting views without arguing for any conclusion, that you may realize the confusion which still exists in regard to the knowledge of the subject.

In going over the literature one can readily recognize two distinct groups of individuals who are actively engaged in studying this subject. The one group, rather strictly scientific, is composed of physiologists and experimental pathologists who try to reproduce in animals, more or less nearly, some of those conditions which are well recognized clinically and are believed to be due to disturbed endocrine function. The other group is made up of clinicians. Some of these have had laboratory training, are conservative, have critical judgment and are contributing valuable observations. But many lose sight of the scientific side, are fascinated by the wonderful variety of symptoms and conditions and are carried away by theories until their enthusiasm so warps their judgment that their conclusions are of little value. To these two classes of individuals we must look for the development of our knowledge of the endocrine glands.

Thyroid. Of all the glands, the function of the thyroid is the best understood. The various clinical pictures due to disturbance of its function are more or less familiar and need not be considered here. The methods of arriving at a diagnosis of any increased or diminished function of the gland have been developed so that the diagnosis can be made with considerable degree of certainty. The basic fact that seems positively demonstrated is that the function of the thyroid is to control cellular activity. This it does by the production of thyroxin, a definite chemical substance with a known formula.[1] The total amount of thyroxin in the body is extremely small and has been estimated to be about 14 mgr. (equivalent to about 1/5 of a grain). In a thyroidless individual with myxedema, the average basal metabolism is about 40% below normal. By the injection of 14 mgr. of thyroxin in such an individual the metabolism is raised to normal. In fact, the metabolic rate of a thyroidless person can be controlled at will, and kept at practically any level by the administration of thyroxin—at normal, above normal or below normal. When there is an increased amount of thyroxin in the system, whether it is injected or whether it is produced in excess by an adenomatous goitre, there develops the characteristic train of symptoms of hyperthyroidism associated with greatly increased cellular activity and a much elevated level of metabolism. This is the only instance in which the active principle of a ductless gland has been isolated and successfully used to replace the function of the gland.[2] What relationship thyroxin bears to the other ductless glands is not known. There are disturbances of metabolic rate due to changes in the pituitary gland, in the pancreas, and perhaps in the adrenal, but these disturbances are to much less extent than those following thyroid changes. Kendall has suggested that the other glands are of secondary importance in this respect and that thyroxin stimulates them to activity.

Brooks,[3] in a discussion of the milder types of hyperthyroidism, takes the accepted view that the thyroid gland is the activator of cellular metabolism, and that cellular activity is back of all other activities of the body. He attributes to thyroid function "the alert, aggressive attitude of the healthy young man and the similar, though femi-

*President's address, Providence Medical Association, January 2, 1922.

[2] Very recently an extract from the pancreas called "Isulin" or "Iletin" (supposed to be from the Islands of Langerhans) has been used by hypodermic injection. This seems to increase temporarily the carbohydrate metabolism in the diabetic.

nized, pose of the healthy young woman," and suggests that the embarrassments, nervous apprehensions, and other emotional states are to a certain degree, though not exclusively, evidence of thyroid activity. He argues that the more virile, attractive, and charming the individual, the more likely it is that a large thyroid gland is present, and that such a person responds to emotional and mental stimuli with quick and appropriate reactions. His discussion along this line is extremely interesting but more or less speculative. He emphasizes his belief that some of the most brilliant and active students and useful young men are those who have an unusual amount of thyroid activity; and that occasionally, because of unusual stress, the gland overfunctions, producing its well known symptoms, which can often be corrected by very simple measures.

Adrenal Glands. The adrenals are made up of two parts, the medulla and the cortex, which differ from each other in their cellular structure and their origin. The cortex has the same origin embryologically as the genitalia and in tumors of the cortex there is frequently some abnormal sex development. The medulla arises from the same cells from which the sympathetic nervous system takes its origin.

The physiological data and some clinical views, with reference to the function of the adrenals, are presented in a most admirable way by Stewart.[4] Most laboratory animals in whom the adrenals have been removed die, evidently from the lack of something which is indispensable to the bodily functions; but the symptoms which these animals show subsequent to the removal of the glands and the manner of their death are in no way characteristic. Even the experimentors themselves admit that the manner of death might be brought about by various other causes besides the removal of the glands. Neither has it been possible to produce any characteristic symptoms associated with partial adrenal insufficiency even though the changes may gradually lead to death. In this the adrenals differ markedly from the pancreas, for portions of the pancreas may be removed and a characteristic diabetes be produced.

Clinicians have so long known of adrenalin and of some of its characteristic actions that the impression generally prevails that adrenalin is the important secretion of the adrenal gland. All physiological evidence, however, is that the cortex of the gland is the part which is indispensable to life and not the medulla, although it is the medulla which secretes the adrenalin. In dogs and monkeys the secretion of adrenalin has been gradually diminished or entirely suppressed by the removal of one adrenal and by section of the secretory nerves of the other; yet the animals have survived indefinitely in good health. There is, then, no evidence that diminution of the output of adrenalin or even total deprivation can give rise to symptoms, and animals deprived of it may even endure forced muscular effort as well as normal animals.

Clinically also there seems to be insufficient evidence to substantiate the view that in so-called hypoadrenia or arterial hypotension, the diminished output of the adrenals plays any important part; or that adrenalin is important in the adrenal insufficiency, such as is illustrated by the well known syndrome of Addison's disease. Further, there is no evidence that any notable change occurs in the adrenal output in either direction in cardio-vascular shock, or that if it did occur it could play any part in producing it.

As opposed to the conservative views of Stewart, a quotation from Timme[5] is of interest. He says, "The hypoadrenal individual cannot undertake work that requires much energy or requires sudden demand for exertion or shock. He succumbs to anaesthesia, to sudden speeding, to stair climbing. He is prone to suffer from the various disturbances of the dystonic vascular or smooth muscular system, such as spasmodic asthma, urticaria, angio-neurotic edema; and from the vagotonic disturbances such as hyperacidity, gastro-intestinal hypermotility, low carbon dioxide tension of the blood, eosinophilia, intense perspiration, slow pulse, positive oculo cardiac reflexes, and many other symptoms and signs of this syndrome." This statement is the product of an active imagination and cannot as yet be substantiated.

The work of Cannon[6] which has shown that fear, rage and pain increase the adrenalin output and at the same time apparently make available in the blood some of the glycogen of the liver in the form of sugar, making it quickly available for energy, suggests that Stewart's views may be overconservative.

Pituitary Gland. Marie in 1886 called attention

to the association of acromegaly with pituitary tumor and Froelich in 1901 showed that such tumors were sometimes associated with underdevelopment of the skeleton and adiposity. In 1907 experimental work was begun by Paulesco, who devised a method of operation which was later perfected by Cushing and his associates and since that time there has been considerable information obtained concerning pituitary abnormalities and the changes which are associated with them. As is well known, the gland consists of two distinct parts, an anterior lobe of epithelial origin, coming embryologically from the tissues forming the mouth, and a posterior lobe, an offshoot from the central nervous system, the latter being more or less enveloped by the former. There is a third part called the pars intermedia which is of epithelial origin but intimately attached to the posterior lobe.

Englebach[7] has attempted a classification of the disorders of the gland, based upon whether it is the anterior lobe or the posterior lobe which is involved, and whether the involved lobe over-functions or underfunctions and also whether the disturbance occurred in the pre-adolescent or post-adolescent period of life. It is believed that the anterior lobe has to do with the bony development and with the development of the genitalia and when the function is disturbed these parts develop abnormally and are associated with abnormalities of the skin, teeth and hair, temperature, pulse, and blood pressure. In Englebach's classification there falls under disturbances of the anterior lobe four distinct groups, two of them caused by *underfunction.* The first occurs if the hypofunction begins before adolescence, in which case the individual is in every way underdeveloped. The second is when the hypo-function develops after adolescence. The other two groups are caused by *overfunction,* the characteristics depending upon whether the over-function began before adolescence or subsequently. Without going into detail, one may say that hyper-function in the pre-adolescent state produces gigantism of the various types, while in the post-adolescent period it produces growth in the flat bones with enlargement of the ends of the long bones, the resulting condition being recognized as acromegaly.

The secretion of the posterior lobe is believed to have to do with metabolism. When this secretion is disturbed there are variations of carbohydrate tolerance, with glycosuria, and hyperglycaemia, adiposity, and polyuria, the symptom complex being known as adiposo-genital-dystrophy.

Cushing noted, in experimenting with dogs, that after removal of the posterior lobe there would be the development of a condition closely resembling this and also that these dogs had persistent polyuria. The results of these experiments seemed to fortify the belief that this clinical syndrome was due to pituitary abnormality. However, very recently Bailey and Braemer have published some very careful experiments on dogs in which they believe that they have positively shown that the polyuria which is essentially a diabetes insipidus is caused, not by removal of the posterior lobe of the pituitary but by injury to a neighboring structure, the hypothalamus, and they have been able, by puncture of the hypothalamus, to produce this polyuria, which is either transient or permanent, depending upon the extent of the lesion which they make. In two instances the dogs also developed the adiposo-genital syndrome. They cast considerable doubt upon some of the views which have been held with reference to the pituitary body and maintain that diabetes-insipidus is due to an injury of the hypothalamus rather than to the injury of the pituitary gland. They are responsible for the statement that pituitrin has never been shown to be a secretion and that there is no evidence that it is anything else than a pharmacologically very interesting extract. They maintain that there is as yet very little knowledge of the functional significance of the pituitary gland and cite the fact that the posterior lobe may be removed without causing any symptoms.

It is not profitable in a paper of this character to enter too much into the details of the discussion, but it is of great interest to compare these findings, as they show in what an unsettled state the knowledge of the pituitary gland still remains.

The Gonads. Brown Sequard, in 1889, at that time 72 years of age and a very feeble man, inoculated himself sub-cutaneously with the filtered extract of the testicle of a dog. This was repeated several times with apparently a great deal of benefit. His physical strength appeared much increased, his mental activity returned and he carried on active, arduous work for some time. Subsequent investigators have not been able to attain

any very satisfactory results along this line. At the same time, the work of Steinach, who has attempted rejuvenation by ligation of the vas deferens, has aroused considerable interest. The operation has been reported a success in the hands of certain operators but a failure in others. His idea has been to divert nutrition from the seminiferous tubules to the interstitial elements of the gland.

Experimentalists have shown very definitely that if the ovary is removed from a growing fowl and the testicle transplanted from the male, the animal will take on the appearance and characteristics of the male, and the opposite result can be obtained by transplanting ovaries into the castrated male bird. Operations on rats and guinea pigs have shown that secondary sex characteristics may be produced practically at will and that by transplanting of the ovary into young, castrated males, the normal male genitalia will show regressive changes, while the skeleton takes on the feminine type, breasts may develop, and the entire attitude of the animal may change so that the male can and will suckle young.

It can be seen, then, that there is some remarkable specificity of the interstitial secretions of these glands. Just how much this action may depend upon the interrelation with other glands is unknown, but the abnormalities of the genitals in association with pituitary disorders and adrenal tumors suggest that there is some intimate interglandular stimulation or inhibiting action.

Thymus. Hoskins[8] reviews at some length the present knowledge of the thymus gland and experimental work in connection with it and the various theories of its function. The evidence in favor of there being a real secretion is meagre and circumstantial and while it is difficult to prove that it does not produce a secretion, the burden of proof lies upon those that claim that it does. Figures show, contrary to the prevailing idea, that the thymus is proportionately much larger at birth than it is at puberty, that it diminishes in size in proportion to the body weight as the child grows older, and that it is associated with a corresponding diminution of lymphocytes in the blood. The theory prevails, then, in Hoskins' opinion, that it is a part of the lymphoid system, furnishing lymphocytes and leucocytes for the purpose of combating infection, and that this system diminishes as the individual grows older and its need is lessened.

In contrast to the opinion of Hoskins, that of Timme[9] will serve as a good illustration of what may be the opposing views of the two types of observers. In his opinion, under the influence of the thymus, the body takes on its growth, while at the same time inhibitory factors are operative in the direction of the gonads. In other words, sex differentiation is held in abeyance. Without going into too much detail, the theory is, that with a persistent thymus the child's growth will be abnormally rapid and the secondary sex characteristics will be delayed, the individual is childlike, self-centered and imitative, and late in developing normal mentality. On the other hand, with early involution of the thymus, the child's growth is checked and he is undersized, but he has an early, rapid, differentiation of the secondary sex characteristics and is likely to be unusually precocious mentally.

One view, then, is that the thymus has no internal secretion, while the other is that its over or underfunction will modify to an extraordinary degree the growth and personality of the individual.

Parathyroids. It has been demonstrated that the symptoms of tetany which were sometimes observed in the earlier cases of thyroidectomy were caused by the accidental removal of the parathyroid glands. Their function seems to be concerned with the metabolism of calcium or guanidine and the suggestion is made that they may play some part in the acid-base equilibrium of the body. Whether idiopathic tetany, not associated with operation on the thyroid, is of parathyroid origin has not been proven. In post-operative tetany large doses of calcium are usually of benefit.[10]

Berkely[11] is of the opinion that a deficiency of the parathyroids is a cause of paralysis agitans and that it will be ultimately possible to cure the disease by supplying this deficiency as it is possible to cure cretinism by the use of thyroid. This theory seems to have very little support.

Treatment with Active Principles, Gland Extracts, Etc.

The lack of the thyroid principle can be supplied by feeding whole thyroid glands, thyroid extract,

or by injecting thyroxin. So far as any of the other disorders of function are concerned, our knowledge of any method of supplying the principle which may be lacking is not sufficient to enable us to treat any of them with anything like the same assurance. To give an idea of the actual state of knowledge, I shall refer to a few suggestions made by various of the endocrinologists.

Timme[12] advises the administration of pituitary gland in adrenal insufficiency and advises against adrenalin extracts for any length of time, as these seem to retard the activity of the individual's own adrenals. Just how he determines whether the individual's adrenals are secreting or not and how he determines the retardation he does not state.

Larson,[13] in experimenting with young rats which have had the thyroid glands removed, states that there is a beneficial action on their development and their growth by administration of the anterior lobe of the pituitary.

Hoxie,[14] in referring to endocrine therapy for maintaining vasomotor tone, says that experience leads one to believe that low blood pressure is not because of adrenal insufficiency and says that the pituitary gland seems to be of the most benefit for maintaining blood pressure. He believes that the pituitary gland and thyroxin regulate the blood pressure and thinks that the extract of genital glands may have a value.

Ebaugh and Hoskins[15] treated a case of adiposo-genital dystrophy for six months with dessicated pituitary, thyroid and suprarenal substances with very marked changes in his condition. While they make no claims as to proving that the improvement was due to the gland administration, their report is very suggestive. It is evident that there is a prevailing belief in a distinct interglandular relationship. But carefully controlled experiments must yet be made in order to determine the value of any of these gland substances or extracts, for this can never be determined by the indiscriminate use of mixed glands. The use of the latter, on the other hand, may be definitely harmful.

Basal Metabolism. One naturally associates in his mind basal metabolism with the subject of endocrine glands. Within the last two or three years there have been various types of instruments offered for the purpose of measuring this rate, some claiming that the procedure has been reduced to its simplest terms. Considering all the conditions necessary for the determination of metabolism, the results in the hands of the inexperienced are likely to be inaccurate, and, if inaccurate, misleading. Even when done with the greatest care, it is quite generally accepted that the practical value is only in connection with hypo or hyperthyroidism—first of all with reference to diagnosis and second as a control in treatment and that any variation in metabolism associated with disturbance of activity of any of the other glands has no clinical significance.

The extent of the literature on the endocrines is almost incredible. The little journal which is devoted to endocrinology has an abstract department in which they attempt to give the titles of all current articles and a brief review of each. During the past year they have reviewed about 1,200 articles. A great amount of the stuff is worthless. Especial reference should be made to a book on the endocrines by Bandler, particularly because the book has had a rather wide sale. At first glance it is rather plausible, but on the whole its influence is pernicious. The author says, "In conclusion, let me make this prophecy. In five years there will be few mental defectives (except those already developed), few feeble-minded, few insane, few tumors, few cancers, few diabetics, few renal diseases, and so on. Since they are due to endocrine aberrations, they will be arrested in their earliest stage by endocrines. When the next war comes, if it does at all, soldiers before going over the top will not be given alcohol; they will be given endocrine cocktails and the adrenal cortex will be an important ingredient, and if the world in the near future administers to its diplomats, to its highest officials, to its legislators, and to its people, the proper endocrines, especially the anterior pituitary, and inhibits the adrenal cortex a little bit, there may be no more wars." This is said in all apparent seriousness.

Hoskins, in reviewing the book, says, "There is nothing in the presentation to exclude the judgment that he (the author) is merely a deluded enthusiast."

He further says that until "writers accept the obvious fact that the fundamental data is in a state of chaos and present their material on an empirical statistical basis, endocrinology can lay no convincing claim to be regarded as a valid science

and in the meantime the field inevitably will continue to offer a happy hunting ground for quacks and faddists."

Something should be said about the relationship of these glands to the autonomic nervous system but in such a brief resumé it is not possible to do more than barely touch upon a few phases of the subject. In its consideration, however, one is impressed by the fascinating problems that are offered for the study of the ductless glands and is encouraged by the hope that at some future time some of the obscure ailments will be better understood. To make this study profitable, conservative judgment is essential, otherwise enthusiasm based on faulty conclusions drawn from few and superficial observations will lead one far astray.

[1]Kendall & Plummer, Journal A. M. A.
[2]Brooks, Endocrinology, Vol. V, 1921, p. 177.
[4]Endocrinology, 1921, Vol. V, No. 3, p. 283.
[5]Neurological Bulletin, 1921, Vol. III, No. 1, p. 3.
[6]American Journal Physiology, 1914, Vol. 33, p. 357.
[7]Endocrinology, 1920, Vol. IV, p. 347.
[8]Endocrinology, Vol. II, No. 3, p. 241.
[9]Neurological Bulletin, 1921, Vol. III, No. 1, p. 3.
[10]Endocrinology, Vol. V, No. 4, p. 403; Boothby.
[11]Med. Record, N. Y., 1916, Vol. XC, p. 105.
[12]Neurological Bulletin, 1921, Vol. III, No. 1, p. 3.
[13]American Journal Physiology, 1919, Vol. 38, p. 55.
[14]Endocrinology, Vol. V, p. 773.
[15]Ebaugh & Hoskins, Endocrinology, 1921, Vol. V, p. 121.

GENERAL PRINCIPLES OF THE TREATMENT OF SKIN DISEASES.*

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In treating a disease of the skin there are certain general principles which should be understood in order that we may counteract or remove the morbid condition present. First, we must endeavor in every way possible to determine the exact etiology of the disease: is it a purely local disease, that is, is the morbid process confined entirely to the skin, or is it a symptom or manifestation of a constitutional disorder?

Those dermatoses which are due to an invasion of the skin by bacteria or parasites are most often purely local and only local measures are required in their treatment. Other skin diseases are now considered to be a manifestation of a toxemia due to bacterial foci in some part of the body. Examples of this type are lupus erythematosus and erythema multiforme. Still others are vaguely due to faulty digestion or metabolism or to some form of food sensitization, for example, certain forms of eczema and urticaria.

In such constitutional diseases as Hodgkins disease, leukemia and diabetes, we sometimes have pronounced skin lesions. The fact that the skin manifestations are due to an internal disorder has an important bearing on the prognosis but does not prevent our doing a good deal in the way of local treatment to relieve the patient's discomfort or suffering.

External Applications.

In prescribing external remedies for cutaneous diseases we should bear in mind the general rule that when the skin is highly inflamed, soothing and protecting applications are called for. For example, in an acute dermatitis of the face or hands with heat and redness and sometimes the formation of vesicles or blebs, the greatest relief can be obtained by covering the part with a gauze dressing kept constantly wet with a very mild antiseptic solution such as boric acid or Burow's solution (liquor alumini acetatis N. F.); the latter should be diluted, one part of Burow's solution to eight parts of water. In such cases the use of a strong antiseptic lotion or ointment may do actual harm. When the disease has reached a subacute stage or in cases which are subacute from the onset, Lassar's paste with 1% or 2% salicylic acid or the calamine and zinc lotion are useful, or the two may be alternated. The formula for Lassar's paste is as follows:

Amyli	
Pulv. zinci oxidi	aa drams iv
Petrolati	oz i
Acidi salicylici	gr v-x

As will be noted, there is the same amount by weight of powder and of vaseline in this prescription. This makes a rather dry paste which allows exudation to pass freely from the skin instead of holding it there, as the ordinary salve tends to do.

The usual formula for the calamine and zinc lotion is:

Calamine prep.	
Pulv. zinci oxidi	aa oz ½
Sodii Biboratis	
Glycerinae	aa drams ii
Aquae calcis	Q. S. ad oz viii

*Read before the Pawtucket Medical Association, October 19th, 1922.

This lotion is sopped on the skin with a piece of cotton or gauze and allowed to dry. It exerts a distinct drying effect on the skin and is not often used on the face, as it is apt to make the face feel stiff and drawn. But on the other parts of the body it is an extremely useful application. Phenol 1% or 2% and menthol ¼% are often added to increase its soothing and antipruritic effect.

If the subacute inflammation merges into the chronic we use slightly more stimulating treatment, such as a weak tar ointment, as follows:

Amyli	drams ii
Crude coal tar	drams ½-i
Petrolati	oz i

Or if there is beginning infiltration of the skin, we may increase the amount of tar in this prescription and we may often enhance its effect by adding 2 to 4% of salicylic acid. The tar may be replaced by sulphur, 30 to 60 grains to the ounce, with good results in some cases. If the skin becomes markedly thickened and infiltrated we use stronger salicylic acid ointments—5 to 10%—with the addition of tar in some cases, or chrysarobin—2 to 5%—and the ointment is thoroughly rubbed in the skin. Chrysarobin should not be used on the scalp or face on account of the danger of getting it in the eyes.

Bacterial and Parasitic Diseases.

A common example of a bacterial skin disease is impetigo contagiosa, due to the streptococcus pyogenes. This is readily curable by ammoniated mercury ointment. The crusts are first softened and removed by the application for a half hour or more of a pad of gauze soaked in warm water to which soap has been added. Then the ointment containing 2% of ammoniated mercury is applied. The 10% ointment of the U.S.P. is unnecessarily strong and will irritate the skin in many cases.

The most common example of a parasitic disease is scabies, due to the acarus scabiei. As we all know, sulphur ointment is the remedy for scabies, but if it is not properly used, together with other measures, which I will describe, the patient often fails to get well or soon becomes reinfected. From a too long use of sulphur ointment a sulphur dermatitis is likely to occur and this complication is more severe and more difficult to cure than the original trouble. The sulphur ointment is prescribed in the strength of 1 dram of sulphur to the ounce of vaseline or lard and the prescription should call for 12 or 16 ounces for an adult in order that the treatment may be properly carried out. For the treatment of scabies I have the directions printed which not only saves time in the office or outpatient service but also insures the patient's carrying them out as desired.

These directions read as follows:

1. Take a hot bath at night for half an hour, during which scrub the skin with soap. Dry by rubbing the skin with a coarse towel.

2. After the bath rub the salve well into the skin over the whole body, excepting the face and head. Give special attention to the hands, arm pits and abdomen. Use one-third of the jar of salve each night for three nights. While using the salve wear the same under-clothing and use the same night clothes and sheets. Do not bathe again until the fourth day.

3. On the fourth day take a bath, change under-clothing and bed-clothing.

If these directions are carried out faithfully the acari will be destroyed in the three nights' treatment and in the course of a week or ten days all of the papules and scratch marks will have disappeared. If the skin has become badly irritated or eczematized we prescribe soothing applications such as the calamine and zinc lotion previously mentioned.

Another common example of a parasitic affection is ringworm of the body. This disease occurred with marked frequency among our soldiers and sailors during the late war and is still prevalent, both among ex-service men and others. It has a predilection for the genitocrural region, where it is called tinea cruris, formerly termed eczema marginatum and in tropical countries known as Dhobie itch. Another common location is between the toes or fingers; it may occur on any part of the body, but in adults the scalp is never infected. For the treatment of this condition I have found the well known Whitfield's ointment extremely serviceable. It contains 6% salicylic and 12% benzoic acid in vaseline or benzoinated lard. This is rather strong for use between the toes, where it is held in close contact with the skin, and on the scrotum, and in such locations I usually prescribe it half strength.

The disease is very apt to recur after it is cured and to prevent this the Whitfield's ointment should

be continued at intervals of two or three days for a month or two. Some cases do not yield to Whitfield's ointment, but in my experience it is mainly those cases which have become eczematized and usually the dry form of this disease. In such cases the use of a wet dressing or immersing the part in an antiseptic solution for a time daily helps to clear up the condition, and for this 1 to 2000 potassium permanganate solution or the Burow's solution previously mentioned is usually effective.

Diseases of the Scalp.

Dermatoses of the scalp form a rather distinct class, both as regards the diseases which occur in this location and the treatment which is employed to cure them. A careful inspection of the scalp should be made in all cases of skin disease of doubtful etiology, particularly if occurring on the face or neck or on the chest or back. By this means we will often get a clew as to the exact diagnosis and the treatment required.

Pediculosis capitis is a common affliction, not by any means limited to the poorer classes. Many impetiginous and eczematous eruptions, not only on the scalp, but also on the face, neck or body, particularly in children, are due to this cause. The same may be said of seborrhoeic dermatitis, except that it is more common in adults than in children.

In a general way, stronger applications may be used on the scalp without producing irritation than on other parts of the body. For the removal of the pediculus equal parts of kerosene and sweet oil left on over night with the head covered with a rubber bathing cap is probably as good as anything. This should be repeated for three nights, with a thorough shampoo each morning, and on the third day a cloth dipped in vinegar should be used to remove the remaining nits from the hair. This must be done carefully and thoroughly in a good light.

In the treatment of seborrhoeic dermatitis of the scalp or body, ammoniated mercury and salicylic acid are two of our best remedies. They may be combined in an ointment containing from 2 to 4% of each. This may be applied nightly for a time, then once or twice a week at night, followed by a shampoo in the morning. No harm is done in these cases by washing the head once or twice a week. In fact, it is a distinctly beneficial measure and a necessary one in order that our treatment may be effective.

Seborrhoeic diseases of the scalp are very prone to recur, due probably to reinfection in barber shops, hair dressing parlors or from the patients' own hair brushes or hats. To prevent this a lotion containing one dram of resorcin, two grains of bichloride of mercury, to six ounces of equal parts alcohol and water should be rubbed in the scalp two or three times a week. For women, this lotion should be applied directly to the scalp with a medicine dropper, as it is not necessary to wet the hair. This prescription should not be used by anyone having blonde hair, because the resorcin is apt to stain the hair. In such cases the same amount of euresol should be substituted for the resorcin.

Physical Measures.

Among the physical measures useful in dermatology, I shall discuss briefly the Roentgen ray and radium, the mercury-vapor quartz lamp, carbon dioxide and electrolysis.

The use of the Roentgen ray and radium constitutes our most distinct advance in dermatology in recent years. The effect of the two measures on the skin is very similar. Radium has the advantage that it can be introduced into cavities or orifices such as the nose or mouth and its use in the treatment of leukoplakia and the raised vascular naevi is more effective than the X-ray. For the superficial malignancies—the basal called epitheliomata, occurring so frequently on the face, and early cases of the squamous celled variety, the Roentgen ray is as effective as radium. The seborrhoeic warts which are often seen on the face in elderly people are what may be termed precancerous lesions in that they are liable to undergo a malignant change. By curetting these lesions and giving them an intensive dose of Roentgen ray we prevent further trouble and leave the skin perfectly smooth and free from scar. For use in skin diseases the Roentgen ray has a much wider field of usefulness than radium, owing to the fact that we can treat large areas of the body surface at one time. The skin diseases in which the Roentgen ray is used most successfully are largely those which we formerly failed to cure by medicinal applications. In a general way, it is used in chronic

forms of skin disease, especially where there is marked alteration in the structure of the skin, and in all cases accompanied by severe pruritus, whether or not there is visible alteration or involvement of the skin. In acne vulgaris it is curative in a large percentage of cases. Mackee reports 98% cures in properly selected cases. My own results have been nearly as good. It is particularly the disfiguring type of acne with indurated lesions in which our best results are secured and if such cases can be treated before marked scarring has occurred they will be saved this life-long disfigurement.

In chronic eczema and in the eczematized form of ringworm good results are usually obtained by X-ray treatment.

In lichen planus the itching is often relieved by the first treatment and in time the lesions can usually be cleared up. The internal use of mercury or arsenic is often employed at the same time, because it seems to inhibit the formation of new lesions.

The Roentgen ray is frequently used in psoriasis, although, as with other methods of treatment, the disease will return in time. But it obviates the necessity of using chrysarobin and other disagreeable applications. By some dermatologists it is claimed that the interval of freedom from the disease is longer after X-ray than after medicinal cures.

In all these diseases the treatment consists of small or fractional doses, usually given at weekly intervals. The dosage is accurately measured according to the method developed in this country by Mackee and Remer. One-quarter of a unit is the average amount given at weekly intervals. In epitheliomata large doses are given—two units or more, and the normal skin is covered with sheet lead except for a margin of about one-fourth of an inch surrounding the lesion.

It seems almost unnecessary to say that the Roentgen ray is a dangerous agent if used in a reckless manner. But I have not yet seen a Roentgen ray burn where this method of dose measurement is used.

The mercury-vapor quartz lamp has a rather limited field in dermatology. The flat angiomatous naevi or port wine stains can be rendered much less conspicuous by its use. It is an excellent measure for stimulating the growth of hair in alopecia areata and for promoting the filling in and healing of chronic leg ulcers.

Carbon dioxide snow is a useful agent for removing certain types of moles, particularly on the face, because it causes very little if any scarring. Those moles having a growth of hair should first have the hair removed by electrolysis, that is, the passage of a fine needle into the opening of the hair follicle, using a current of 2-4 milliamperes and allowing the needle to remain in for from 30 to 60 seconds.

The same method is used in removing superfluous hair from the face in women except that a weaker current is used in order to prevent scarring.

In conclusion, it may be said that the prescribing and carrying out of remedial measures in dermatological cases has become a much more exact art than it formerly was. As in other branches of medicine, we secure good results if we make an accurate diagnosis and choose our treatment according to the exact requirements of the case. The use of ready-made remedies—and every pharmaceutical house has a salve on the market which is warranted to be good for all skin disease—has no place in modern dermatology. Such remedies correspond to the shotgun prescription of former days; they are just as unscientific and are rarely effective.

We learn from a reliable authority that "The Abbott Laboratories has just purchased the property, equipment and products of The Dermatological Research Institute, in Philadelphia. The well-known 'D. R. I.' brands of arsphenamine and neoarsphenamine will continue to be made there, under the direction of Dr. George W. Raiziss, who has done much for these products."

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Section on Medicine—1th Tuesday in each month, Dr. Charles A. McDonald, Chairman; Dr. C. W. Skelton, Secretary and Treasurer.

R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of Presiden: Dr. H. E. Blanchard, President; Dr. Jeffrey J. Walsh, Secretary-Treasurer.

The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. James B. Littlefield, Esq., President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

LOOKING FORWARD.

(TO THE LEGISLATURE.)

Occupying as he does the position of a protector of humanity against disease, it is quite remarkable that the average physician should feel that he is belittling his dignity in defending from open assault this acknowledged right.

Yet this is the attitude assumed by many, whenever it has become our unfortunate privilege and necessity to appear before committees of legislative bodies at the State Capitol to protest the passage of laws inimical to public health.

The average law-maker is the average man, usually desirous of equalizing opportunities and his knowledge of what constitutes public health is vague; he is not a physiologist and he may believe with Still, the osteopath, that the human body is a machine. Still did not and the law-maker does not visualize its complexity, however, or the problem of metabolism, for with either, these things have never existed. Our law-maker may sympathize with these persons who practice chiropractic, these followers of Palmer, who believe (or they

do not) that all diseases originate from a common cause, to wit, the maladjustment of one or more vertebrae—whether mumps, pneumonia, appendicitis, erysipelas or toothache.

Preventive medicine, sanitation, and research are meaningless terms in the chiropractic code and it is most probably to these people unknown.

Education and not altogether censure should be our attitude toward the legislator, therefore, bearing in mind that any cult or 'ism tinctured with a little mysticism still has, even in these modern days of disillusion, its followers and its lure.

Various absurdities have always been with us and probably will continue; we must needs, therefore, keep up the fight; not of necessity in the capacity of physicians, but as men through whose training and knowledge, exposure of certain reprehensible cults is possible.

It is our natural business to protect and defend every safeguard of common weal.

In this our duty is plain and unavoidable. Lawmakers and others should understand that physicians do not ask that restrictions be placed upon competition, albeit this seems to be a common conception; what we *do* ask and what we insist upon is that these safeguards of human health that made the Medical Practice Act imperative, shall neither be weakened nor destroyed and we should emphatically subscribe to the sentiment embraced in the language of that eminent authority, Dr. Frederick R. Greene of Chicago, who spent eighteen years in the analysis of national public health measures, when he says: "ALL PERSONS DESIROUS OF THE SAME PRIVILEGES, SHALL BE REQUIRED TO COMPLY WITH THE SAME EDUCATIONAL STANDARDS." This quotation embraces the gist of the whole contention, irrespective of faith, school or creed.

It is this that we should impress upon the lawmaker, and when accomplished, chiropractic will be relegated to its proper setting with the "voodoo," "Kneip cure," "Laying-on-of-hands" and the "Blue Glass" craze of years ago.

A PSYCHOPATHIC HOSPITAL.

Mental hygiene is a term which has come into general use very recently. Its exact definition is not possible, but to the physician and educated laymen the term means something fairly concrete. The foundation of the National Mental Hygiene Association was laid by a non-medical man. Himself a victim of serious mental disease from which he recovered, in gratitude he set about to interest physicians and laymen in mental disease. Very much good is being done by this association, by its publicity campaign and its ability to enlist the advice and help of the best American mental specialists to guide the work. Surveys are being made of how the mental disease problem is being treated in different places and just now a representative of the National Association is making a survey of Rhode Island. That there is a lack in this State of facilities for dealing properly with this problem is evident to any careful observer. This lack is most evident in the facilities of reaching the early cases of mental disease. Mental disease once definitely established usually becomes permanent, although a surprising percentage of patients who have been committed to the State Hospital are able to be placed on parole temporarily or permanently. How much can be done to lessen mental disease by early recognition has not been fully demonstrated, but there is evidence enough at hand to convince that it is worth while to attempt it, and a reasonable amount of money spent in this way will bring results as it has done in other fields of public health work. It is evident that the movement should be guided by sound judgment and that all persons engaged in its administration should not be amateurs but thoroughly trained physicians and nurses.

It is anticipating the report of Dr. Williams on conditions in Rhode Island but it is safe to say that he will recommend the establishment of psychopathic hospital. Under present conditions people without means have no place to go for observation for mental disease without formal commitment to the State Hospital. The need of an institution for observation of mental cases has been evident for a long time and should be built at the earliest possible moment. Whether it should be a separate institution or connected with some existing institution is a matter deserving careful consideration. Whoever conducts it, there should be in close association with the State Hospital at Howard, the various clinics for mental diseases, the courts, and nursing associations who have special workers. By team work, something will be accomplished.

Not all the recommendations which Dr. Wil-

liams will make can be carried out, but the officers of the State Association, after careful deliberation, should select the most urgent and most useful of these and concentrate on them.

Not since the days when chains and other instruments of torture were stricken from the limbs of the insane, has such a stride been made in the care of mental disease and its prevention as is being made at the present time, stimulated largely through the National Mental Hygiene Association.

HOSPITAL STAFF ORGANIZATION.

It has long been realized by the managers of large industrial enterprises that even in the presence of ample financial backing, adequate equipment and an excellent personnel, the lack of a proper system of production spells inefficiency and failure. Such a system means organization and discipline, the assignment of a definite degree of responsibility to every officer and employee, quite as it is in the army. This principle applies equally to hospitals, especially the larger charitable institutions, whose efficiency depends on the properly correlated efforts of resident staff, visiting staff, nurses and employees. In such a hospital the visiting staff alone consists of a large number of physicians, surgeons and other specialists, all supposedly of proved ability, each in his line, but necessarily men of varied temperament, personality, and also a varied degree of industry and conscientiousness. In accepting a position on such a staff, carrying with it the privilege of caring for and studying large numbers of the sick poor and greatly enhancing his professional standing in the community, the physician takes upon himself very definite duties and obligations. In order that such duties and obligations shall be properly carried out and that no neglect or inefficiency on the part of those visiting physicians who may by nature be somewhat below standard in the matter of conscientiousness and devotion to duty shall remain unchecked it is absolutely essential that the staff be so organized that each individual member is definitely responsible to some colleague above him and that the heads of the various services are directly responsible to the superintendent and through him to the trustees of the hospital.

It is the belief of the JOURNAL that a reorganization of the staffs of the various larger hospitals in the State is a crying need. Under the present system which leaves the visiting man free to care for or neglect his patients without supervision, according to the dictates of his own conscience, the average grade of work done is necessarily lowered by those whose efforts are somewhat perfunctory and whose real interests are elsewhere. Each service, as at present constituted in practically all our hospitals, is without a head and consequently without a policy and without the ability to consistently advance along any given line of endeavor. A conscientious visiting physician or surgeon working out some definite system of study or treatment during his short term of duty returns a year later to find that his labors have been wasted and his system destroyed by his colleagues who have supplanted him, some of whom may be less keen or conscientious than he, and whose ideas as to particular methods may differ decidedly from his. Furthermore, lack of encouragement of clinical research and the system of promotion by seniority have everywhere checked the efforts of those who wish heartily to progress. The result is threefold. First, and foremost, patients suffer in that they are in certain instances less adequately and systematically treated than they might be, because the visiting physician or surgeon has no one to direct or "check up" his work. Second, the physicians themselves suffer in that they are prevented by the lack of a proper system and proper encouragement in careful and continuous work, from developing themselves into experts and leaders in their profession. Third, the community suffers from the lack of just such experts who are much needed as consultants and who could well be developed from the more talented members of our own hospital staffs. The JOURNAL heartily recommends to the trustees of our larger hospitals which utilize the gratuitous services of private physicians, a program of complete visiting staff reorganization, placing at the head of each service some one member who is best qualified to occupy that position, and involving the principles of promotion on merit and a definitely graded responsibility as to duty which shall insure a maximum of skill and efficiency as regards the care of patients and shall allow each service to develop with some degree of continuity definite plans as to study and treatment of patients which shall be carried out by the members of each service as a unit.

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION.

October 2, 1922.

The regular meetings of the Providence Medical Association were resumed at the Medical Library October 2, 1922, at 9 P. M., the Vice-President, Dr. William B. Cutts, presiding in the absence of the President.

The records of the previous meetings were read and approved.

The application for membership of William A. Mahoney having been approved by the Standing Committee and there being no objection, the Secretary was instructed to cast one ballot for his election.

Dr. Frederick N. Brown arose to inquire about the stenographer and her duties. After considerable discussion, a motion was passed, leaving the matter to the Secretary and the editor of the RHODE ISLAND MEDICAL JOURNAL for solution.

The chairman announced the death of Dr. L. F. C. Garvin and appointed as a committee on resolutions Dr. C. F. Leonard, Dr. William R. White and Dr. J. E. Mowry.

Dr. D. L. Richardson informally presented the subject of anterior poliomyelitis as exemplified in the recent epidemic, emphasizing the fact that it is a contagious disease with an unusually problematic prognosis and the importance of preventing strain on the weakened muscle and subsequent contracture.

Discussion was carried on in the form of a symposium by the following speakers:

Dr. B. U. Richards presented charts showing incidence and mortality in different countries and States, including Rhode Island.

Dr. Charles V. Chapin emphasized the infectiousness of the disease due to a filterable virus in nasopharynx or lower intestinal tract, probably very frequent in a mild form of coryza in carriers not recognized, and because of this fact rendering quarantine practically useless.

Dr. C. A. McDonald brought out the fact that encephalitis lethargica and poliomyelitis may be the same general infection affecting various parts of the central nervous system and emphasized the important signs differentiating meningitis, encephalitis and poliomyelitis.

Dr. H. B. Sanborn continued the discussion from a neurological point of view, showing the close relationship in many ways of poliomyelitis and encephalitis lethargica.

Dr. C. D. Sawyer presented the pathological aspect of the diseases, together with the spinal fluid findings. Dr. M. S. Danforth urged the importance of early precaution to prevent deformity by protecting the weakened muscles against stretching. This concluding the official program, the subject was opened to general discussion and Dr. William H. Jordan discussed the subject from his experience in the recent epidemic, in which he advocated daily spinal puncture as part of the treatment.

The chairman announced the death of Dr. G. E. Simpson and appointed Dr. A. H. Harrington, Dr. H. A. Jones and Dr. D. L. Richardson a committee to draw up and present suitable resolutions.

The meeting adjourned with a symposium in verse by Dr. William R. White and Dr. Creighton W. Skelton. Attendance, 61 members, 3 guests. A special collation, which seemed to meet the approval of the members, followed the meeting.

RAYMOND G. BUGBEE,
Sec. pro tem.

PROVIDENCE DISTRICT SOCIETY.

Monthly meeting was held Monday, November 6, 1922, at Rhode Island Medical Society Library, Francis Street, at 8:45 P. M., and the following program was offered:

Symposium on post operative pulmonary sequelae. Discussion opened by Dr. C. O. Cooke, Dr. Harry L. Barnes, Dr. Jay Perkins, Dr. F. N. Bigelow.

Special demonstration of the film of the Providence Tuberculosis League, entitled, "Winning the Fight."

The Standing Committee has approved of the applications of Dr. James F. Boyd, Dr. Edward G. Melvin, Dr. John F. Oslin.

PETER PINEO CHASE, M.D., *Secretary.*

RHODE ISLAND MEDICO-LEGAL SOCIETY.

The Rhode Island Medico-Legal Society held its regular quarterly meeting October 26, 1922, in the Rhode Island Library, James B. Littlefield, Esq., presiding. He has advocated a membership campaign and 17 new members were voted in.

Richard B. Comstock, Esq., President of the R. I. Bar Association, spoke on the subject of "Mental Hygiene from the Layman's Viewpoint." He was especially impressed with the lack of facilities of observing the mentally sick in Rhode Island without commitment proceedings. He felt the need of revision of our present laws and the enactment of new ones to assist persons without means, who suffered from mental ailments, to be allowed proper treatment. He said there is no greater work the people of Providence can do than to get back of those who have devoted years to the study and treatment of mental diseases. He fully understands the stigma attached to the person, who by two physicians signing a certificate, is committed by the court, cannot be wiped out, also if a person has no money and is in mental distress he could see no reason why they should need be committed but should be sent to a mental hospital for treatment.

Dr. Arthur H. Ruggles of Butler Hospital spoke on mental hygiene from the physician's standpoint. He believes it the most important of present health problems. The medical profession has a great deal to learn as to the underlying causes of mental disease. We don't know those things, we are just beginning to get an inkling as to the road to follow, but it is a long one. We need the backing up of both the legal and the medical professions. We must also get the family physician to help and give his sympathetic co-operation. The most effective method of attacking this problem, the observation and the treatment of mental diseases, should begin in the schools, where the symptoms of most mental deficiencies first manifest themselves.

In discussion about commitment, Dr. Arthur H. Harrington of the State Mental Hospital, said there are only three ways in which a person can be admitted to the State Mental Hospital under the present laws. Persons without means are committed to the State institution when after receiving a certificate from two reliable physicians a court issues a mittimus. Second, a person with means can be taken there after two reliable physicians have presented a certificate to the State Penal and Charitable Commission and have obtained permission to send the patient to the institution. Thirdly, a patient can be admitted who of their own accord goes to the State Hospital and asks to be placed under observation and to be treated.

Twenty-one members and 17 guests were present and following the adjournment a light supper was served. JACOB S. KELLEY, M.D., *Secretary.*

RHODE ISLAND OPHTHALMOLOGICAL AND OTOLOGICAL SOCIETY.

The regular bi-monthly meeting of the R. I. O. and O. S. was held in the Rhode Island Medical Library on October 12th at 8:45 P. M., with President Dr. Blanchard in the chair.

The minutes of the previous meeting were read and approved. There were no outstanding committees to report.

Application for membership in the O. and O. S. was received from Dr. N. A. Bolotow and referred to standing committee for consideration.

Dr. Bigelow showed a very interesting case of laryngeal tumor, which was examined by all present, with a special discussion later by Dr. Bigelow and Dr. Abbott.

Dr. Bigelow reported a tentative plan which he trusts to carry out at the annual meeting of the Eastern Section of the American Laryngological, Rhiniological and Otological Society to be held in Providence Saturday, January 27th, 1923. The motion was made and carried that the O. and O. Society entertain the visiting surgeons who attend this meeting, and five dollars ($5.00) be levied on each member of our Society to defray such expenses as may occur, any residue to return to the O. and O. Society.

Paper of the evening: "Indications for Radical Frontal Sinus Operation," with the report of cases, by Dr. Richard Travis Atkin of New York City. A paper very interesting and instructive, clearly and scientifically compiled, with the necessary X-ray plates to make it a remarkably well presented paper. The discussion was entered into by all, with a sense of keen interest.

Discussion closed by Dr. Atkins. A rising vote of thanks was tendered Dr. Atkins for his interesting and instructive paper.

Members present: Dr. VanBenschoten, Dr. Porter, Dr. Adams, Dr. Abbott, Dr. Fisher, Dr. Bigelow, Dr. Dowling, Dr. Messinger, Dr. Harvey, Dr. Ghazarian, Dr. Blanchard, Dr. Walsh.

Meeting adjourned at 10:30 P. M.

Standing Committee for the year: Frank F. McCabe, M.D.; A. Arlington Fisher, M.D.; Christopher J. Astle, M.D.

JEFFREY J. WALSH, *Secretary.*